Amendments to the Claims

The listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A method for ~~analyzing~~ detecting the presence of analyte particles in a sample ~~for binding events when a substance of interest is present with the sample~~, comprising:

establishing a setting and a position for an instrument comprising a sample assay area, a control and a light collection device;

positioning the sample in said sample assay area relative to a light source that outputs a light beam;

receiving said light beam by at least portions of the sample;

collecting scattered light from the sample portions using said light collection device of said instrument;

processing digital image data based on said light collected during said collecting step using said control of said instrument; and

counting individual analyte particles ~~counting objects~~ after said processing step using digital information to detect the presence of said particles ~~in determining at least whether the substance of interest is present with the sample~~.

2. (Original) A method, as claimed in Claim 1, wherein:

said establishing step includes providing magnification related to collecting said scattered light.

3. (Original) A method, as claimed in Claim 1, wherein:

said establishing step includes locating an optical subsystem in a direction relative to the sample.

4. (Original) A method, as claimed in Claim 1, wherein:

said establishing step includes locating said light source such that said light beam is at a desired angle relative to the sample.

5. (Original) A method, as claimed in Claim 1, wherein:

said collection device includes a photoelectric device and said establishing step includes regulating at least one of integration time and gain related to said photoelectric device to provide desired light contrast.

6. (Original) A method, as claimed in Claim 1, wherein:

said light beam includes a laser beam and the sample is associated with a test spot and said establishing step includes having said laser beam encompass at least all of said test spot with uniform light intensity.

7. (Original) A method, as claimed in Claim 1, wherein:

said positioning step includes moving at least one of the sample and said light beam.

8. (Original) A method, as claimed in Claim 1, wherein:

said processing step includes receiving electrical signals from said light collection device and obtaining said image data using said electrical signals.

9. (Original) A method, as claimed in Claim 1, wherein:

said processing step includes using at least a first light intensity related procedure and at least a first size related procedure.

10. (Original) A method, as claimed in Claim 9, wherein:

said first light intensity related procedure includes at least one of: enhancing a dynamic range related to light intensity; implementing at least one lookup table application related to light contrasting; performing a thresholding function related to light intensity; and utilizing a lower limit threshold based on pixel values associated with said light collection device.

11. (Original) A method, as claimed in Claim 10, wherein:

said performing step includes using a histogram analysis.

12. (Original) A method, as claimed in Claim 9, wherein:

said first size related procedure includes at least one of: conducting a morphology application; filtering using at least one parameter related to size; and performing a connectivity function related to adjacent objects.

13. (Original) A method, as claimed in Claim 1, wherein:

said processing step includes providing a lower limit threshold based on histogramrelated information.

14. (Original) A method, as claimed in Claim 1, further including:

storing information in memory of said control related to said at least one of said setting and said position.

15. (Previously Presented) A method, as claimed in Claim 1 wherein said processing step includes adjusting a property selected from the group consisting of integration time and gain.

16. (Currently Amended) A method, as claimed in Claim 1, wherein:

~~the~~ said sample test area includes a test spot comprised of at least a first subspot and a second subspot immediately adjacent to said first subspot and in which said processing step includes obtaining said image data using said collection device from said first subspot, and separately obtaining said image data from said second subspot, and said counting step includes counting objects from said first subspot before obtaining said image data from said second subspot.

17. (Currently Amended) A method, as claimed in Claim 16, wherein:

said first subspot has a first sample, the ~~substance of interest~~ analyte particle is a first ~~substance of interest~~ analyte particle and said image data from said first subspot includes information related to the first ~~substance of interest~~ analyte particle when present and said second subspot has a second sample, different from the first sample, to be used in determining whether a second ~~substance of interest~~ analyte particle, different from the ~~substance of interest~~ first analyte particle, is present.

18. (Original) A method, as claimed in Claim 1, wherein:

said digital image data is based on a two dimensional array of elements.

19. (Currently Amended) A method, as claimed in Claim 1, wherein:

~~the~~ said sample has a light-scattering label that includes at least one of: colloidal gold, selenium, silica particles, magnetic particles, metal particles, metal coated particles and polymer particles and in which said polymer particles are made of at least one of: latex, polystyrene, polymethylacrylate and polycarbonate.

20-32. (Cancelled)

33. (New) A method according to Claim 1, wherein said analyte particle comprises individual cells or cluster of cells.

34. (New) A method according to Claim 33, wherein said cells are bacteria.

35. (New) A method according to Claim 1, wherein said light beam is a laser beam having an outside diameter approximately from 5-50 microns.

36. (New) A method according to Claim 1, wherein said sample assay area is divided into a number of local detection areas.

37. (New) A method according to Claim 36, wherein said digital image data is preserved as discrete signals corresponding to each said local detection areas.